We claim

1. A process for the preparation of low molecular weight linear alpha olefins having 4 to 24 carbon atoms, comprising oligomerising ethylene in an inert aliphatic or aromatic solvent in the presence of a catalyst including at least two components, a first component selected from zirconium alkoxide and zirconium aryloxide, and a second component selected from an alkyl aluminum and/or alkyl aluminum halide component.
2. A process as claimed in claim 1 wherein the process is carried out under a continuous supply of ethylene and under agitation.
3. A process as claimed in claims 1 wherein the process is performed in semi-continuous mode with ethylene being fed continuously during each period of the process.
4. A process as claimed in claim 1 wherein the catalyst system comprises of at least two components, the first component comprising of zirconium (IV) alkoxide or carboxylate and the second component comprising of triethylaluminum and/or ethylaluminum sesquichloride.
5. A process as claimed in claim 1 wherein the catalyst is of the formula $Zr(OR)_4$–Et_3Al wherein R is alkyl or aryl.
6. A process as claimed in claim 1 wherein the catalyst is of the formula $Zr(OR)_4$–$Et_3Al_2Cl_3$ wherein R is alkyl or aryl.
7. A process as claimed in claim 1 wherein the catalyst is of the formula $Zr(OR)_4$–$Et_3Al/Et_3Al_2Cl_3$ wherein R is alkyl or aryl.
8. A process as claimed in claim 5 wherein Et_3Al is reacted with $Zr(OR)_4$ in the mole ratio of 10:1 to 60:1.
9. A process as claimed in claim 6 wherein $Et_3Al_2Cl_3$ is reacted with $Zr(OR)_4$ in the mole ratio of 10:1 to 60:1.
10. A process as claimed in claim 7 wherein $Et_3Al/Et_3Al_2Cl_3$ is reacted with $Zr(OR)_4$ in the mole ratio of 10:1 to 60:1.
11. A process as claimed in claim 4 wherein the ratio of zirconium alkoxide to the free alcohol in the system is in the range of 1:0.33 to 1:2.3.
12. A process as claimed in claim 7 wherein when Et_3Al and $Et_3Al_2Cl_3$ are used, the Et_3Al diluted in solvent is initially charged into the reactor and then $Et_3Al_2Cl_3$ and other catalyst components are added therein.
13. A process as claimed in claim 1 wherein the ethylene pressure is in the range of 18 to 38 kg/cm^2.

14. A process as claimed in claim 1 wherein the oligomerisation is carried out at a temperature in the range of 80°C to 140°C.
15. A process as claimed in claim 1 wherein, the process is carried out for a time period in the range of 1 hour to 3 hours.
16. A process as claimed in claim 1 wherein, the solvent used is selected from cyclohexane, toluene and n-octane.
17. A process as claimed in claim 2 wherein the reaction is carried out at an agitator speed of 300 to 1000 rpm.
18. A process as claimed in claim 1 wherein, the zirconium component is selected from the group consisting of zirconium tetra cresylate, zirconium tetra dimethyl phenolate, zirconium tetra n-butoxide, zirconium tetra iso-propoxide, zirconium tetra n-propoxide, zirconium tetra butyrate and zirconium tetra isobutyrate.
19. A process as claimed in claim 1 wherein said catalyst includes a thiopene as a third component to reduce chain growth.
20. A process for the preparation of low molecular weight linear alpha olefins having 4 to 24 carbon atoms, comprising oligomerising ethylene in an inert aliphatic or aromatic solvent in the presence of a catalyst $Zr(OR)_4$–$Et_3Al/Et_3Al_2Cl_3$ wherein R is alkyl or aryl, at a pressure is in the range of 18 to 38 kg/cm^2, a temperature in the range of 80°C to 140°C for from 1 hour to 3 hours.
21. A process as claimed in claim 17, wherein the mole ratio of $Et_3Al/Et_3Al_2Cl_3$ to $Zr(OR)_4$ is 10:1 to 60:1.
22. A process as claimed in claim 17 wherein the reaction is carried out at an agitator speed of 300 to 1000 rpm.
23. A process as claimed in claim 17 wherein said catalyst includes a thiopene as a third component to reduce chain growth.
24. A process as claimed in claim 17 wherein said solvent is selected from toluene, n-Octane and cyclohexane.
25. A process for the preparation of low molecular weight linear alpha olefins having 4 to 24 carbon atoms, comprising oligomerising ethylene in an inert aliphatic or aromatic solvent in the presence of a catalyst $Zr(OR)_4$–$Et_3Al_2Cl_3$ wherein R is alkyl or aryl, at a pressure is in the range of 18 to 38 kg/cm^2, a temperature in the range of 80°C to 140°C for from 1 hour to 3 hours.
26. A process as claimed in claim 25, wherein the mole ratio of $Et_3Al_2Cl_3$ to $Zr(OR)_4$ is 10:1 to 60:1.

27. A process as claimed in claim 25 wherein the reaction is carried out at an agitator speed of 300 to 1000 rpm.

28. A process as claimed in claim 25 wherein said catalyst includes a thiopene as a third component to reduce chain growth.

29. A process as claimed in claim 25 wherein said solvent is selected from toluene, n-Octane and cyclohexane.